

REMARKS

The Applicants thank the Examiner for the careful examination of this application and respectfully request the entry of the amendments indicated hereinabove.

Claims 49-56 are pending. Of the pending claim set, Claims 55 and 56 are withdrawn and Claims 49-54 are rejected. The Specification is amended and Claims 55-56 are cancelled herein.

The Applicant is confused by the rejection of Claim 55 under 35 U.S.C. §112, second paragraph, because Claim 55 was withdrawn from consideration. A divisional has been filed for Claim 55 (U.S. Pat. App. No. 12/042,954) and it has been cancelled hereinabove.

Claim 49 positively recites a trench defined by a recess in the dielectric layer where the trench does not extend below a top surface of the substrate. These advantageously claimed features are not taught or suggested by the patents granted to Turner, Kurosawa et al. or Fischer et al.; either alone or in combination.

Turner teaches away from the advantageously claimed invention because Turner teaches a trench that does extend below a top surface of the substrate

(column 4 lines 59-66, FIG. 9). The Applicant respectfully traverses the statement in the Office Action (page 3) that Turner teaches a trench defined by a recess in a first insulating layer 66. The Applicant submits that none of the drawings (including the cited FIG. 9) show a “recess” in element 66. Moreover, Turner teaches that element 66 is a portion of the capacitor (namely, the dielectric) in column 5 lines 34-35 and 44-45. The Applicant submits that element 66 cannot be two separately claimed elements (i.e. both the capacitor dielectric (as taught by Turner) and the first insulating layer (as proposed in the Office Action)).

In addition, the Applicant respectfully traverses the statement in the Office Action (pages 3-4) that it “would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Turner to include a trench...as disclosed in Kurosawa”. The Applicant submits that one having ordinary skill in the art at the time the invention would not modify Turner to include the trench disclosed in Kurosawa et al. because the trench (element 48) taught by Turner is an isolation trench (column 4 lines 56-68; FIG. 7) and the trench of Kurosawa et al. (FIG. 2; column 3 lines 17-21) cannot be an isolation trench (because it leaves the diffusion layer 14 operational – compared to the trench of Turner that renders diffusion layer 44 inoperable).

Regarding Claim 53, the Applicant respectfully traverses the statement in the Office Action (page 3) that Fischer et al. “discloses the use of a storage node further

that comprises a conducting layer (80) lining the trench and the side of the first contact pillar (70) (For example: See Figure 6).” The Applicant submits that Fischer et al. teaches the deposition of the conducting layer over the ‘top’ of the second outer surface of the conductive pillar (column 3 lines 42-45), but not on the ‘side’ of the contact pillar as advantageously claimed (note that Fischer et al. teaches a conductive layer 80 deposited “over” second outer conductive pillar surface 78 - column 3 lines 62-65, FIG. 6).

Regarding Claim 54, the Applicant respectfully traverses the assertion in the Office Action (page 4) that the second contact pillar of Turner can be element 62 (see discussion regarding Claim 50) and elements 76/78 (see discussion regarding Claim 54). The Applicant submits that the bit line contact (element 76; column 6 lines 8-19; FIG. 11) is not “substantially the same height as the first contact pillar” as required by Claim 50 (note that Claim 54 depends from Claim 50).

Therefore, the Applicant respectfully traverses the Examiner’s rejection of Claim 49 and respectfully asserts that Claim 49 is patentable over the patents granted to Turner, Kurosawa et al. and Fischer et al.; either alone or in combination. Furthermore, Claims 50-54 are allowable for depending on allowable independent Claim 49 and, in combination, including limitations not taught or described in the references of record.

For the reasons stated above, this application is believed to be in condition for allowance. Reexamination and reconsideration is requested.

Respectfully submitted,

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